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Case Study

EFFECT OF PANCHAKARMA THERAPY IN THE MANAGEMENT OF SPINOCEREBELLAR ATAXIA

Fathima.A[1], Lisna Sherin. K.E[1]*, Simi Raveendran[2], Ambili Krishna[3]

*[1]PG Scholar, [2]Associate Professor & H.O.D, [3]Assistant Professor, Department of Panchakarma, Government Ayurveda College, Thiruvananthapuram. India.

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ABSTRACT

Spino cerebellar ataxia is a progressive cerebellar ataxia inherited by autosomal dominant transmission, it occurs as a result of derangement of cerebellum and its afferent and efferent pathways. Signs and symptoms of ataxia includes gait impairment, scanning speech, blurred vision due to nystagmus, incoordination of hand and tremor with movement. The present case involves a patient diagnosed as spino cerebellar ataxia which was successfully managed with ayurvedic treatment. A 36-year-old female patient having complaints of imbalance, slurred speech, poor coordination with tremors diagnosed as *Vatavyadhi* due to *Avarana*. The treatment was based on the principles of *Kaphahara* and *Marutha anulomana*. Treatment adopted was *Swedana, Udwartana, Virechana, Utsadana, Balaguduchyadhi vasti, Navadhanya kizhi, Nasya* and *Shirovasti*. Assessment of the patient was done using SARA scale before and after the treatment.

INTRODUCTION

Spino cerebellar ataxia refers to a group of rare genetic neurological disorders characterized by progressive loss of muscle control, coordination and balance. There are over 30 distinct types classified based on specific gene mutations[1]. The global prevalence of ataxia is estimated to range from 0.3 to 2 per 1 lakh population[2]. Clinical manifestations commonly include gait ataxia, dysarthria, slow saccades, nystagmus, poor coordination and tremors with movements[3]. The symptoms often lead to the patients dependency on others for routine daily activities. There is currently no definitive treatment to cure spino cerebellar ataxia or to slow its progression; management is primarily supportive and includes physical and occupational therapy. In Ayurveda, this condition is classified as a *Vatavyadhi* and the aim of this study is to relieve the severity of its common symptoms through an Ayurvedic approach.

MATERIALS AND METHODS

A clinical case study of spino cerebellar ataxia conducted in our institute.

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Patient Information

A 36 years old female IT graduate working in the construction field was apparently normal until two and half years ago. The symptoms began to develop following the administration of two doses of the covid-19 vaccine. Initially she experienced spasm in the left thigh region, followed by a gradual onset of swaying while walking and slurred speech, both of which was progressive in nature. Subsequently, she developed a shortened gait and experienced difficulty in climbing stairs. She began experiencing multiple backward falls, none which were associated with loss of consciousness. For the same complaints she consulted a neuro physician and diagnosed as spino cerebellar ataxia, but did not get significant relief. Hence patient was admitted here for the ayurvedic management.

Past history of illness

No history of DM, HTN and DLP

Investigation

MRI Brain (25/05/2023): Few discrete, punctate, non-diffusion restricting T2 and flair hyperintensities in the periventricular and deep white matter of bilateral frontal region.

Bilateral IAM, CP angle cisterns and 7th -8th nerve complexes appear normal except for type 1 AICA loop on the right side.

Neurological Examination[4]

HMF - Intact

Cranial Nerves

3,4,6-Nystagmus present

Hypometric slow saccades

5- Clenching of jaws, side to side movement of jaws affected

Motor system examination

Muscle tone-Left hypertonic

Muscle power

	Right limb	Left limb
Upper limb	5	4
Lower limb	5	4

Reflex

	Right	Left
Biceps	++	+
Triceps	++	+
Knee	++	+
Ankle	++	+

Sensory system

Stance-Impaired

Gait- Ataxic gait

Coordination test

Finger nose test- Dysmetria present

Dysdiadochokinesia-Present

Rebound phenomenon- Present

Intention tremor- Present

Heel-shin test- Dysmetria on left side

Tandem walking- Affected

Ayurvedic parameters examination details

Dasavidha pareeksha

Dooshya [Dosha-Vata pradhana tridosha, Dhatu-Rasa, Raktha, Mamsa, Majja]

Desha [Bhoomi-Sadharana, Deham-Sarvakayam]

Balam [Roga-Pravara, Rogi-Madhyama]

Kalam [Kshanadhi- Sarva rtu, Vyadhyavastha-Purana]

Anala-Samagni

Ahara [Abhyavaharana- Madhyama, Jarana sakthi-Madhyama]

Prakruthi- Vata kapha

Vaya- Madhyama

Satwam- Madhyama

Satmya- Vyamisra satmya

Nidana panchakam

Hetu-Mala mutra vega rodha, Chintha, Aniyamitha bhojana kala, Katu ahara sevana

Poorvarupa- Avyaktha

Rupa- Imbalance while walking, giddiness, slurred speech, heaviness of left upper limb.

Sampraphthi

Due to *Vata prakopa hetu sevana* > *Vatakopa lakshana* in different *Srotas* > *Prakupitha vayu* produces *Kha vaigunya* > produce symptoms.

Treatment Protocol

S.No	Procedure	Medicine used	Duration
1	*Dhanyamla dhara*	*Dhanyamla* (sour rice gruel)	7 days
2	*Udwartanam*	*Kulatha, Yava, Sandhaneeya gana choorna*	7 days
3	*Virechanam*	*Sukumara eranda taila* (35ml in hotwater)	1 day
4	*Utsadanam*	*Kolakulathadhi choorna* in *Panchamla taila*	7 days
5	*Bala guduchyadhi vasthi*		7 days
6	*Nava dhanya kizhi*		7 days
7	*Abhyanga, Ushma Sweda, Nasya*	*Abhyanga* with *Prabhanjana taila + Bala taila* *Nasya* with *Ksheerabala taila 41 avarthi*	7 days
8	*Shiro dhara*	*Ksheerabala taila + Maha masha taila*	7 days

Shamana Oushadhi

S.No	Name of medicine	Dose
1	*Gandharva hasthadi Kashaya*	60ml BD, before food
2	*Dhanadha nayanadi Kashaya*	60ml BD before food
3	*Brihath vata chinthamani rasa*	1/2-0-1/2
4	*Saraswatharishtam*	10ml BD after food
5	*Sidhamakaradwajam*	1 packet at 11 am
6	*Mashaathmagupthadi Kashaya*	60ml BD before food
7	*Mahath panchagavya gritha + Pravala bhasmam*	15ml *Gritham*+1 pinch *Bhasmam* at 5 pm

RESULTS

The patient's assessment was conducted using the Scale for Assessment and Rating of Ataxia (SARA) a clinical tool used to evaluate various impairments associated with cerebellar ataxia[5]. The scale consists of eight categories that assess different aspects of motor function, including gait, stance, sitting balance, speech, finger chase for dysmetria, nose finger test for coordination and tremors, rapid alternative movements for dysdiadochokinesia and heel to shin slide for coordination and tremors. Before the treatment SARA score was 31 which was reduced to 12.5 after the treatment. There was a significant reduction in imbalance during walking, standing and sitting, along with marked improvement in slurred speech. She is now able to perform her daily activities independently without relying on others.

Overall Assessment with the Help of SARA Scale

S.No	Criteria	Score Before T/T	Score After T/T
1	Gait	7	3
2	Stance	6	3
3	Sitting	4	0
4	Speech disturbance	4	1
5	Finger chase	2	0.5
6	Nose Finger Test	2	1
7	Fast alternating hand movements	4	3.5
8	Heel Shin Slide	2	0.5
	Total Score	31	12.5

DISCUSSION

SCA can be correlated with *Vatavyadhi* and more specifically it exhibits symptoms indicative of *Kaphavrutha vyana vayu*[6]. Therefore the initial line of treatment focuses on removing *Avarana* caused by *Kapha* and pacifying aggravated *Vata*[7].

1. At first *Dhanyamla dhara* and *Udwarthana* were done to remove *Kaphavarana* and provide effective *Rookshana*.
2. *Virechana* with *Sukumara eranda taila* effectively facilitates proper *Vatanulomana*.
3. *Kolakulathadi churna* is selected for *Utsadana* due to its *Vatahara* properties, while *Panchamla taila* is used as it is *Sarva vatajith*.
4. *Vasthi* is considered the foremost treatment in Ayurveda. It is administered into the *Pakwashaya* from where its *Veerya* spreads throughout the entire body, exerting systemic therapeutic effects[8].
5. *Navadhanya kizhi* is indicated in conditions involving neurological deficits, as it is *Vatahara*. It supports the nourishment of muscles and peripheral nerves due to the use of ingredients with *Balya* and *Rasayana* properties.
6. *Nasya* acts directly on *Urdhwa jathru vikaras* and provides strength to the *Skandha, Greeva, Asya* and *Vaksha*[9]. *Nasya* with *Ksheerabala taila* is beneficial due to its *Indriya prasadana* properties and its stimulant effect on the nervous system.
7. *Sarvanga abhyanga* and *Nadi sweda* are *Vatahara karma* and helps in attaining muscle strength and balance of body.
8. *Shirovasthi* exerts a direct action on the central nervous system through the *Snigdha, Ushna* and *Vyavayi* properties of the medicated oil, enhancing the functions of the sense organs and relieving stress[10].
9. *Gandarvahasthadi Kashaya* helps in *Agnivrudhi* and *Samyak malapravarthana*. *Dhanadhanayanadi Kashaya* is indicated in *Akshepaka*. Since most of the ingredients are *Ushna* and *Kapha vata hara*, it is especially beneficial in the initial stage of the disease. *Brihath vata chinthamani rasa* possesses *Medhya, Rasayana, Balya* and *Ojo vardhaka* properties and it helps arrest neurodegenerative activity. The main ingredient of *Saraswatharishtam* is *Brahmi*, which act as a nerve tonic and helps reduce anxiety and depression. *Sidhamakaradwaja* acts as *Rasayana*. At the time of discharge *Mahath pancha gavya gritha* along with *Pravala bhasma* was given to enhance the patient's mental strength and *Masha Athmagupthadi Kashaya* was administered as a *Rasayana.*

CONCLUSION

Spino cerebellar ataxia is a progressive neurodegenerative disorder and currently there is no definitive treatment to cure the disease or halt its progression. The only treatment modality focuses on improving quality of life and handling symptoms.

Ayurveda's holistic approach, incorporating panchakarma therapies and *Shamana chikitsa* plays a significant role in halting disease progression. *Rookshana* therapy is first administered to remove *Avarana*, followed by *Snehana* to pacify *Vata*. This approach helps in managing symptoms and there by improves patient's quality of life.

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***Address for correspondence**
Dr. Lisna Sherin.K.E,
PG Scholar,
Department of Panchakarma,
Government Ayurveda College,
Thiruvananthapuram. India.
Email: lisnasherin68@gmail.com

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